

FACTOR

1) $x^2 - 9x + 20$

2) Factor + simplify

$$\frac{x^2 + 6x + 5}{x^2 - 3x - 4}$$

3) $3x^2 + 11x - 4$

4) $2x^2 + 20x + 42$

5) $12xy^2 - 4x^2y$

6) $a^3 - 4a^2 + 3a - 12$

7) $25n^2 - 144$

QUADRATICS

1) Graph $y = 3(x-4)^2 - 2$

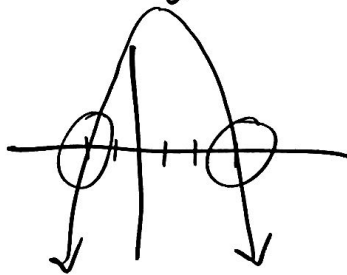
2) Find the vertex of A. $y = -2(x+4)^2 - 1$ B. $y = x^2 - 8x + 3$

3) Find the solutions of $y = x^2 - 8x - 20$

4) Find the solutions of $y = 3x^2 + 8x - 7$

5) Find the y-intercept of $y = 2x^2 - 12x + 5$

6) Find the solutions of



7) Describe the transformations of A. $y = -4(x+1)^2 - 3$
B. $y = \frac{1}{4}x^2 + 6$

8) If an object falling is modeled by $h = -9.8t^2 + 500$ where t is seconds, what is the height of the object after 2 sec?

"The principle goal of education is to create men who are capable of doing new things, not simply of repeating what other generations have done. Men who are creative, in the sense of discoverers."

-Jean Piaget

1) $(7+i)(4-2i)$

2) $\sqrt{-49}$

3) What is the sum of $10+3i$ and $5-7i$?

4) What is the value of x in $\sqrt{10-3x} + 2i$?

5) Find $g(3i)$ if $g(x) = x^2$

6) Solve $x^2 + 25 = 0$

MATRICES

1) Make a 5×2 matrix

$$3) \begin{bmatrix} 7 \\ 9 \\ 14 \end{bmatrix} + \begin{bmatrix} -5 \\ 2 \\ 6 \end{bmatrix}$$

$$4) \begin{bmatrix} 6 & 10 \\ 5 & 7 \end{bmatrix} + \frac{1}{2} \begin{bmatrix} 12 & -10 \\ 20 & 9 \end{bmatrix}$$

$$5) \begin{bmatrix} 15 & 32 \\ 8 & 7 \end{bmatrix} - \begin{bmatrix} 6 & 10 \\ 4 & -5 \end{bmatrix}$$

$$6) \text{ If } A = \begin{bmatrix} -2 & 11 & -9 \\ 3 & 7 & 1 \end{bmatrix}, \text{ find } -3A$$

7) Solve the system

$$\begin{aligned} 4x + 5y - 6z &= 15 \\ -6x + 5y - 4z &= 35 \\ 2x + 3y - 3z &= -7 \end{aligned}$$

EXP

1)

Solve the following

A. $2^{3x-5} = 16$ B. $7^{x+4} = 7^{3x-2}$

2) $5^{-1} =$ $8^0 =$

3) Graph $y = 2 \cdot 3^x$

4) Write an equation for each:

A.

x	y
-1	2.3
0	7
1	21

B. Through $(0, -4)$ and $(1, -12)$

5) Which is increasing the fastest?

A. $y = 10 \cdot 2^x$ B. $y = 4 \cdot 8^x$ C. $y = 30 \cdot \frac{1}{2}^x$

6) A company with 10,000 gadgets is decreasing its supply by 10% each month. Write an eq. to Model.

Growth or decay? A. $y = 5(0.7)^x$ B. $y = 2(5)^x$
C.

x	y
-1	2.7
0	9
1	27

LOGS

- 1) Rewrite in log form $5^3 = 125$
- 2) Rewrite in exponential form $\log_2 32 = 5$
- 3) Evaluate A. $\log_3 9$ B. $\ln 15$
- 4) Solve A. $\log_4 X = 3$ B. $\log_3 7 + \log_3 X = 6$
- 5) Rewrite as a single logarithm
A. $\log 5 + \log 4$ B. $\log 10 - \log 2$ C. $3 \log 2$